IN THE CLAIMS

Claim 1 (original). System for producing dental impression materials, in which the dental materials of various consistencies are extruded from supply containers through outlet openings in the supply containers into a mixer while being kept isolated from one another, the inlet openings of the mixer being matched to the outlet openings of the supply containers, characterized in that the system comprises at least two of the following elements:

a) a buffer reservoir (22), expanded with respect to an inlet opening (7), which is not separate from the mixing chamber;

b) a strand divider (13) situated in the buffer reservoir (22);

c) an element at the smaller opening (6) of the mixer or the supply container which prevents the larger opening (46) of the supply container or the mixer from being placed thereon;

d) a minimum distance of 4 mm between the mixer shaft (8) and the chamber wall;

e) a mixer shaft (8) whose cross-sectional area is a maximum 20% of the cross-sectional area between the chamber walls;

f) a mixer shaft (8) together with mixing elements which have a combined cross-sectional area that is less than 60% of the cross-sectional area between the chamber walls;

g) a mixer shaft (8) having an expansion which narrows the flow cross section (14, 15);

h) a mixer shaft (8) whose mixer axis located between the mixing blade planes has a wall (57, 58) running eccentrically in the radial direction;

i) a closing part (5) having a flow perturbation element (17) running in the flow direction, opposite the direction of rotation;

j) the mixing blade (16) closest to the closing part is designed such that the mixing blade can extend over only a portion of the surface formed by the closing part (5).

Claim 2 (currently amended). Method for producing dental impression materials, in which dental materials of different consistencies are extruded from supply containers and mixed to form an impression material, and to this end the dental materials are extruded from the supply containers into a mixer, the mixer having inlet openings matched to the outlet openings of the supply containers, characterized in that at least two of the following features are implemented:

k) a component to be mixed is kneadable, and ~~**in particular**~~ is fed to a mixer having a supply chamber (22);

l) the supply chamber (22) is not separated from the mixing chamber (21);

m) the components to be mixed are fed to a mixer shaft (8) whose cross-sectional area is less than 20% of the cross-sectional area of the chamber section (1);

n) the mixer shaft (8) together with the mixing elements occupies less than 60% of the cross-sectional area of the chamber section (1);

o) the strand extruded into the buffer reservoir (22) is divided by means of a strand divider (13) in the buffer reservoir;

p) the smaller inlet opening (6) of the mixer is prevented from being placed on the larger opening of the supply container (46) by means of at least one element;

q) the mixer shaft (8) has an expansion (14, 15) of the mixer shaft (8), situated at least partially between the mixing blade planes, which narrows the flow cross section (54, 55);

r) at least a portion of the mixing elements mounted on the mixer shaft (8) partially generate a mass flow in the direction opposite to the conveying direction;

s) the mass to be mixed is conveyed alternatingly in the radial direction from the outside to the inside, and vice versa.

Claim 3 (currently amended). Dynamic mixer~~**, in particular**~~ for dental impression materials of various consistencies, comprising a chamber section (1) having a discharge opening (2) at the front end (3) of the chamber section and having a

closing part (5) situated at the rear end (4) of the chamber section having a base plate, with inlet openings (6, 7) for individual components to be introduced, and a central opening for a mixer shaft (8) which is rotatable about its longitudinal axis in the chamber section (1), characterized in that the inlet opening (7) for the component ("multi-component") present in the greater quantity expands outside the region (21) of the chamber which is accessible to the mixing elements to a buffer reservoir (22) which is not separated from the mixing chamber (21).

Claim4 (original). Dynamic mixer according to Claim 3, characterized in that the buffer reservoir (22) extends around the inlet opening (7).

Claim 5 (original). Dynamic mixer according to Claim 3, characterized in that at least one end (20) of the buffer reservoir (8) adjoining the closing part (5) has a rounded or beveled shape, at least in part.

Claim 6 (original). Dynamic mixer according to Claim 3, characterized in that at least a portion of the inlet opening (7) is covered at a distance by a stationary deflection element (11).

Claim 7 (original). Dynamic mixer according to Claim 6, characterized in that the area of the deflecting element (11) facing the mixing chamber is smaller than the sum of the areas of the outlet openings (12) for the buffer chamber (22) in the mixing chamber (21).

Claim 8 (original). Dynamic mixer according to Claim 6, characterized in that the deflecting element (11) has a separating edge (13) on its side facing the inlet opening for dividing the product flow.

Claim 9 (original). Dynamic mixer according to Claim 3, characterized in that the sum of the flow cross-sectional areas of the buffer chamber (22) is greater than that for the inlet opening (7).

Claim 10 (currently amended). Dynamic mixer~~, in particular~~ for dental impression materials of various consistencies, comprising a chamber section (1) having a discharge opening (2) at the front end (3) of the chamber section and having a closing part (5) situated at the rear end (4) of the chamber section having a base plate, with inlet openings (6, 7) for individual components to be introduced, and a central opening for a mixer shaft (8) which is rotatable about its longitudinal axis in the chamber section (1), characterized in that a portion of the buffer chamber (22) is situated between the inlet opening (7) and the mixing chamber (21), outside the direct flow path, and the buffer reservoir (22) is not separated from the mixing chamber (21) by a boundary wall.

Claim 11 (original). Dynamic mixer according to Claim 10, characterized in that the buffer chamber (22) has at least one ventilation opening (50, 51, 52, 53, 54) situated away from the mixing chamber (21), the cross-sectional area of the ventilation opening being much smaller than that of the inlet opening (7).

Claim 12 (original). Dynamic mixer according to Claim 11, characterized in that the ventilation opening (50) is axially provided in the shape of a slit at the end of the buffer chamber (22).

Claim 13 (original). Dynamic mixer according to Claim 11, characterized in that the inlet openings (51, 52) are radially provided in the shape of a slit at the exterior and/or the interior of the buffer chamber (22).

Claim 14 (amended). Dynamic mixer~~, in particular~~ for dental impression materials of various consistencies, comprising a chamber section having a discharge opening at the front end of the chamber section and having a closing part situated at the rear end of the chamber section having a base plate, with inlet openings (6, 7) for individual components to be introduced, and a central opening for a mixer shaft (8) which is rotatable about its longitudinal axis in the chamber section (1),

characterized in that both components enter the mixing chamber (21) over the available radial width of the closing part (5).

Claim 15 (original). Dynamic mixer according to Claim 14, characterized in that at least one inlet opening (6) is designed for a channel (18) that is open toward the mixing chamber side.

Claim 16 (currently amended). Dynamic mixer~~, in particular~~ for dental impression materials of various consistencies, comprising a chamber section (1) having a discharge opening at the front end of the chamber section and having a closing part (5) situated at the rear end of the chamber section having a base plate, with inlet openings (6, 7) for individual components to be introduced, and a central opening for a mixer shaft (8) which is rotatable about its longitudinal axis in the chamber section, characterized in that the distance between the mixer shaft (8) and the chamber section (1) is not less than 4 mm at any location.

Claim 17 (currently amended). Dynamic mixer~~, in particular~~ for dental impression materials of various consistencies, comprising a chamber section (1) having a discharge opening at the front end of the chamber section and having a closing part (5) situated at the rear end of the chamber section having a base plate, with inlet openings (6, 7) for individual components to be introduced, and a central opening for a mixer shaft (8) which is rotatable about its longitudinal axis in the chamber section, characterized in that the cross-sectional area of the mixer shaft (8) is less than 20% of the cross-sectional area of the chamber section (1).

Claim 18 (currently amended). Dynamic mixer~~, in particular~~ for dental impression materials of various consistencies, comprising a chamber section (1) having a discharge opening at the front end of the chamber section and having a closing part (5) situated at the rear end of the chamber section having a base plate, with inlet openings (6, 7) for individual components to be introduced, and a central opening for a mixer shaft (8) which is rotatable about its longitudinal axis in the

chamber section, characterized in that the cross-sectional area of the mixer shaft (8), including the mixing elements (23, 28, 27, 30), is less than 60% of the cross-sectional area of the chamber section (1).

Claim 19 (currently amended). Dynamic mixer~~, in particular~~ for dental impression materials of various consistencies, comprising a chamber section (1) having a discharge opening (2) at the front end (3) of the chamber section and having a closing part (5) situated at the rear end of the chamber section having a base plate, with inlet openings (6, 7) for individual components to be introduced, and a central opening for a mixer shaft (8) which is rotatable about its longitudinal axis in the chamber section (1), characterized in that the inlet opening (7) for the component ("multi-component") present in the greater quantity expands up to the region (21) of the chamber which is accessible to the mixing elements to a buffer reservoir (22), and a strand divider is situated in the buffer reservoir (22).

Claim 20 (original). Dynamic mixer comprising a chamber section (1) closed by a closing part (5), and a mixer shaft (8) which is rotatable about its longitudinal axis in the chamber section (1), characterized in that the mixing blade (16) closest to the closing part (5) extends over only a portion of the surface formed by the closing part (5), and the base plate of the closing part (5) contains at least one flow perturbation element (17) running in the flow direction, opposite the direction of rotation.

Claim 21 (original). Dynamic mixer according to one of Claims 1 through 20, characterized in that the dynamic mixer has mixing elements having an impact surface in the direction of rotation, parallel to the mixer axis, and being narrower to the rear, at least in part.

Claim 22 (currently amended). Dynamic mixer according to one of Claims 1 through ~~21~~ 20, characterized in that as a result of the position and shape of the mixing

elements attached to the mixer shaft (8), the mass to be mixed is conveyed alternatingly in the radial direction from the outside to the inside, and vice versa.

Claim 23 (currently amended). Dynamic mixer according to one of Claims 1 through ~~22~~ **20**, characterized in that at least two of the mixing elements attached to the mixer shaft (8) in the axial direction with respect to one another are partially interconnected.

Claim 24 (currently amended). Mixer closing part having two differently sized openings (44, 45, 46) ~~which may be tightly~~ connected to a two-component dental supply source, characterized in that at least one element (40, 41, 42, 43) is situated at the smaller opening (6), one or optionally more elements (40, 41, 42, 43) preventing the larger opening (46) of the component supply device from being placed thereon.

Claim 25 (original). Mixer shaft for a dynamic mixer, having at least two planes (9) axially positioned one behind the other, each having at least two mixing blades (10) radially positioned one behind the other, characterized in that at least a portion of the mixer axis (8) located between the mixing blade planes (9) has an expansion (14, 15) of the mixer axis (8) which narrows the flow cross section (54).

Claim 26 (original). Mixer shaft (8) for rotation about its longitudinal axis in a dynamic mixer, having at least two planes axially positioned one behind the other, each having at least two mixing blades (10) radially positioned one behind the other, characterized in that at least a portion of the mixer axis (48) located between the mixing blade planes (9) has a wall (57, 58) that runs eccentrically in the radial direction.

Claim 27 (cancelled).

Claim 28 (currently amended). ~~**Use of a static chamber mixer**~~ **Method** for mixing polyether impression materials **which comprises mixing said materials in a static chamber mixer**.

Claim 29 (new). A method of mixing dental materials having different consistencies, which comprises mixing them in the dynamic mixer of claim 3.

Claim 30 (new). A method of mixing dental materials having different consistencies, which comprises mixing them in a mixer having the mixer closing part of claim 24.

Claim 31 (new). A method of mixing dental materials having different consistencies, which comprises mixing them in a mixer having the mixer shaft of claim 25.

Claim 32 (new). A method of mixing dental materials having different consistencies, which comprises mixing them in a mixer having the mixer shaft of claim 26.